

SURVEY REPORT

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION



FISH MANAGEMENT SURVEY AND RECOMMENDATIONS

FOR

ROLAND LAKE

2022

PERFORMANCE REPORT

State: Oklahoma

Project Title: Roland Lake Report

Period Covered: 2022

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Date Prepared: December 2023

ROLAND LAKE

ABSTRACT

Roland lake was sampled in the Spring of 2022 via boat electrofishing for black bass population structure and age/growth metrics. The entire shoreline was sampled in a counter clockwise fashion starting at the boat ramp in discrete 10 minute units of effort. Catch of largemouth bass was moderate to high in abundance and was comparable to previous surveys. A subset of bass were taken for age and growth information.

Recommendations include conducting fall gillnetting in 2024 and spring electrofishing for largemouth bass in 2025 and collecting a subset of the sample for age and growth analysis. Stockings of threadfin shad to increase forage should occur on a semi-annual basis if conditions allow. Roland city lake will fall under the proposed new bass regulations of 6 bass/day and only 1 fish >16" allowed. This new regulation should allow Roland city anglers to harvest more largemouth bass to help reduce competition and help overall bass growth.

INTRODUCTION

Garrison Creek Reservoir is a 65 acre lake that was impounded in 1999 by the city of Roland as a water supply. Garrison creek flows directly into the Arkansas River after a 9 mile journey. Water clarity is moderate with a secchi disk range of 4-6 feet. Average depth is 12 feet with the deepest parts reaching in the thirty foot range. Fish habitat consists primarily of chunk rock, rip-rap, and some aquatic vegetation which includes water willow and various submerged vegetation in small patches. Amenities include a large parking lot, boat ramp, fishing dock and some covered picnic tables. Port O' Potties are also on-site. Access to the lake is from dawn until dusk only. An access road, the parking lot and boat ramp were built utilizing Sportfish Restoration monies and the expected useful life will be reached in 20XX for the parking lot and boat ramp. The lake is mostly known as a largemouth bass, sunfish and channel catfish fishery. Roland city officials have provided a sign stating regulations and the flathead catfish daily limit is stated as 10 and needs to be corrected. In the past Garrison creek has been stocked with Florida LMB and Channel catfish (Table 1.) In 2016 approximately 80 spider blocks were placed around the fishing dock and in 2019 cedar trees were placed near the picnic area and marked with a buoy.

Table 1. Roland city stocking history

Year	Species	Number	Size
1999	Channel catfish	6,020	4.5"
1999	BGxRE hybrids	75,000	1.25"
1999	Certified FLMB	1,500	3.0"
2000	Certified FLMB	3,600	3.0"
2000	Channel catfish	3,600	7.0"
2000	Bluegill	61,000	1.0"
2001	Certified FLMB	1,260	3.0"
2001	Channel catfish	3,610	7.0"
2017	Channel catfish	3460	6.25"

Largemouth Bass

Largemouth bass abundance for the 2022 spring electrofishing survey showed abundance to be moderate to high with a catch per unit of effort (CPUE) of 138 bass per hour which was slightly lower than the catch rate from the 2019 survey (Figure 1, Table 1). Size structure of Roland Largemouth consisted mostly of stock and quality sized fish which made up 68% of fish measured, pointing towards population stability for the near future. Legally harvestable bass, $\geq 14"$, made up 26% of bass surveyed (Figure 2). Largemouth growth was relatively slow, taking up to 5 years to recruit into the harvestable population (Table 2). This slow growth however was not reflected in the body condition of the bass which was at acceptable levels for every size category except stock (Table 1). This could be attributed to the 2021 stocking of threadfin shad, which were confirmed to have overwintered during the 2022 electrofishing survey. Proportional size distribution ranges fall within balanced levels with more memorable fish than previous surveys indicating a shift towards more quality sized fish. (Table 3). Biggest fish of the survey measured 23.3" and weighed 8.3 lbs.

Figure 1. Roland city Largemouth Bass catch rate

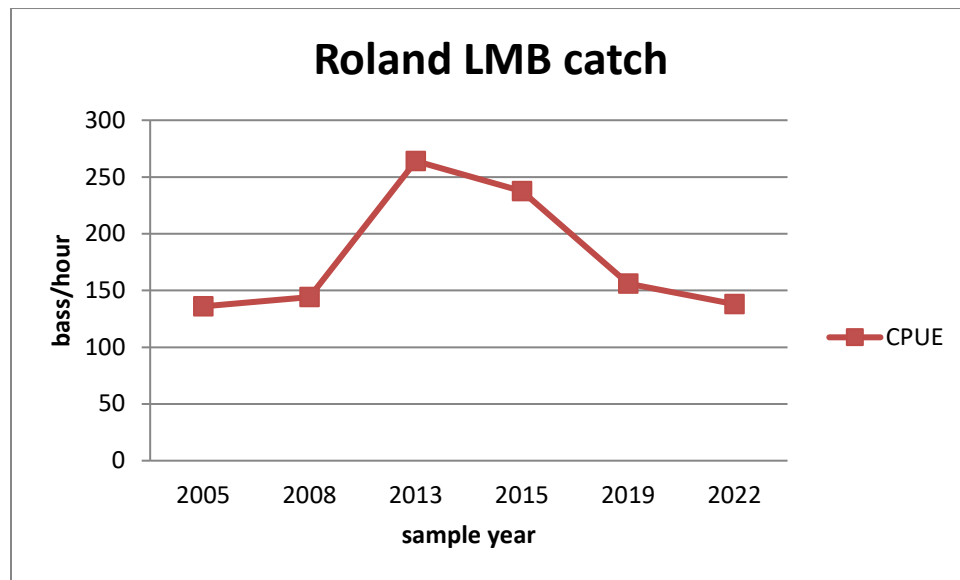


Table 1. Total number (No.), catch per unit effort (CPUE), and relative weights (Wr) by size groups of Largemouth bass collected by spring electrofishing from Roland city lake. Acceptable Wr values are ≥ 90

		Total CPUE	Substock 0-7.8 in	Stock 7.9 in		Quality 11.8 in		Preferred 15 in		Memorable 20.1 in		Trophy 24.8	
Year	No.	CPUE	CPUE	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr	CPUE	Wr
2015	172	238	44.4	94.8	82	74.4	82	20.4	84	2.4	.	.	.
2019	172	156	42	71.3	82	21	85	16.5	88	5.3	93	.	97
2022	162	138	22.3	48.9	88	41.1	93	15.4	96	11.1	96	.	.

Figure 2. Roland city Largemouth bass length frequencies

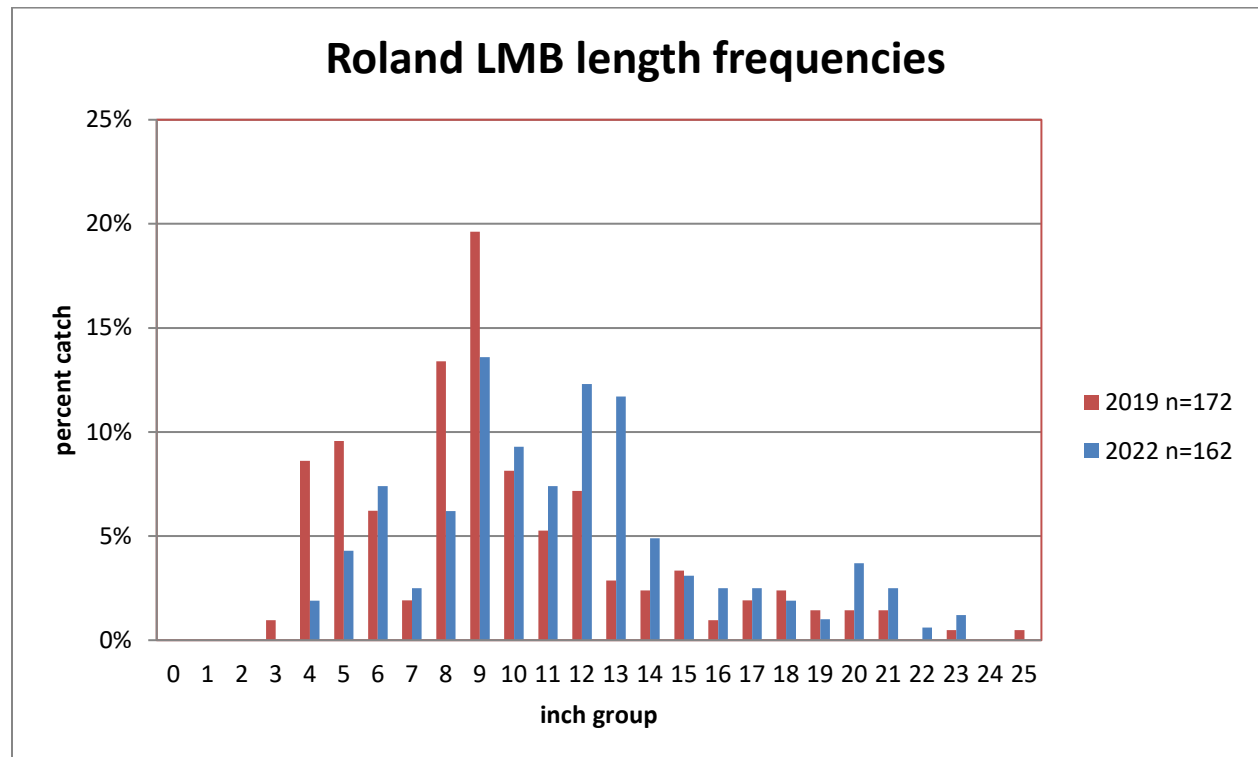


Table 2. Roland city Largemouth mean length at age

Year	Age 1	Age 2	Age 3	Age 4	Age 5	Age 6	Age 7	Age 8	Age 9	Age 13
2008	6.22	9.17	11.4	12.6	13.6	13.93	14.07	14.56	14.6	
2015	8.9	11.3	12.3	13.4	15.8	16.3				
2019	5.54	9.07	10.78	13.46	17.49	17.16	17.57	18.94	18.32	
2022	6.53	9.46	11.5	13.6	13.9	17.4	17.4	21.3	20.6	23.4

Table 3. Roland Largemouth Proportional Size distribution: PSD

Year	PSD-Q	PSD-P	PSD-M	Balanced PSD Values	
2005				PSD-Q	40-70
2008				PSD-P	10-40
2013	45	8		PSD-M	0-10
2015	51	12	1		
2019	38	20	5		
2022	58	23	10		